

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS: HENRY G. WOLSEY ET AL. ART UNIT: 3744

SERIAL NO.: 09/102,340

EXAMINER: W. E. TAPOLCAI

FILED: JUNE 22, 1998

BATCH NO.: W13

TITLE: COOLING POUCH

SUBMISSION OF PRIORITY DOCUMENT

Box Issue Fees  
Hon. Commissioner of Patents and Trademarks  
Washington, D. C. 20231

Dear Sir:

Applicants hereby submit certified copies of their  
priority applications, United Kingdom Patent Application No.  
9622047.0, filed October 23, 1996; and, United Kingdom Patent  
Application No. 9706888.6, filed April 4, 1997, in order to  
perfect their claim to foreign priority under 35 U.S.C. §119.

Respectfully submitted,

HENRY G. WOLSEY ET AL.

By Edwin D. Schindler  
Edwin D. Schindler  
Attorney for Applicants  
Reg. No. 31,459

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I hereby certify that this paper is being deposited this date  
with the U.S. Postal Service as First Class Mail addressed  
to: Hon. Commissioner of Patents and Trademarks, Washington,  
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Edwin D. Schindler  
Edwin D. Schindler, Reg. No. 31,459

September 27, 1999  
Date



The  
Patent  
Office



INVESTOR IN PEOPLE



The Patent Office  
Concept House  
Cardiff Road  
Newport  
South Wales  
NP10 8QQ

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

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Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.

Signed

*AmBrewster*

Dated 10 August 1999

23 OCT 1996

The  
Patent  
Office

23OCT96 E229096-1 C17411  
P01/7700 25.00

# Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

The Patent Office

Cardiff Road  
Newport  
Gwent NP9 1RH

1. Your reference

H.G.W./A.W./2.

2. Patent application number

(The Patent Office will fill in this part)

9622047.0

23 OCT 1996

3. Full name, address and postcode of the or of each applicant (underline all surnames)

HENRY GARNET WOLSEY  
WHITELEYS  
LITTLE TREFFGARN  
HAVERFORDWEST  
PEBS SAG2 5DY.

ALTNEA WOLSEY  
WHITELEYS  
LITTLE TREFFGARNE  
HAVERFORDWEST  
PEMBS. SAG2 5DY

Patents ADP number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

7087299001

7087307001

4. Title of the invention

COOKING WALLET.

5. Name of your agent (if you have one)

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

URQUHART DYKES & LLOYD  
ALEXANDRA HOUSE  
ALEXANDRA ROAD  
SWANSEA  
WEST GLAMORGAN  
SA1 5ED  
~~WHITELEYS  
LITTLE TREFFGARN  
HAVERFORDWEST  
PEMBS  
SAG2 5DY.~~

Patents ADP number (if you know it)

registered 5/77  
actioned 11.9.97

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country

Priority application number  
(if you know it)

Date of filing  
(day / month / year)

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing  
(day / month / year)

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if:

- a) any applicant named in part 3 is not an inventor, or
  - b) there is an inventor who is not named as an applicant, or
  - c) any named applicant is a corporate body.
- See note (d))

**Patents Form 1/77**

9. Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form

|             |         |
|-------------|---------|
| Description | 1 ONE.  |
| Claim(s)    | 1 ONE.  |
| Abstract    |         |
| Drawing(s)  | 1. ONE. |

10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search (Patents Form 9/77)

Request for substantive examination (Patents Form 10/77)

Any other documents (please specify)

11. ☒ We request the grant of a patent on the basis of this application.

Signature

*H. G. Dolsey*  
*for Wolsey*

Date 22. 10 96

12. Name and daytime telephone number of person to contact in the United Kingdom

01437 741 306.

**Warning**

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- Write your answers in capital letters using black ink or you may type them.
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- If you have answered 'Yes' Patents Form 7/77 will need to be filed.
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- For details of the fee and ways to pay please contact the Patent Office.

THIS INVENTION RELATES TO A WALLET  
MADE OF A COTTON/POLYESTER MATERIAL.

THE MATERIAL IS DOUBLE, AND IS SEWN IN  
A FASHION TO FORM "TUBES" ALONG ITS LENGTH.

A QUANTITY OF "SUPER" ABSORBENT CRYSTALS  
ARE INSERTED INTO EACH TUBE AND SEWN IN.

THE WALLET OPENS OUT COMPLETELY FLAT  
WHEN NOT IN USE, BUT IS FOLDED IN HALF  
AND SECURED BY THE VELCRO EDGING FOR USE.

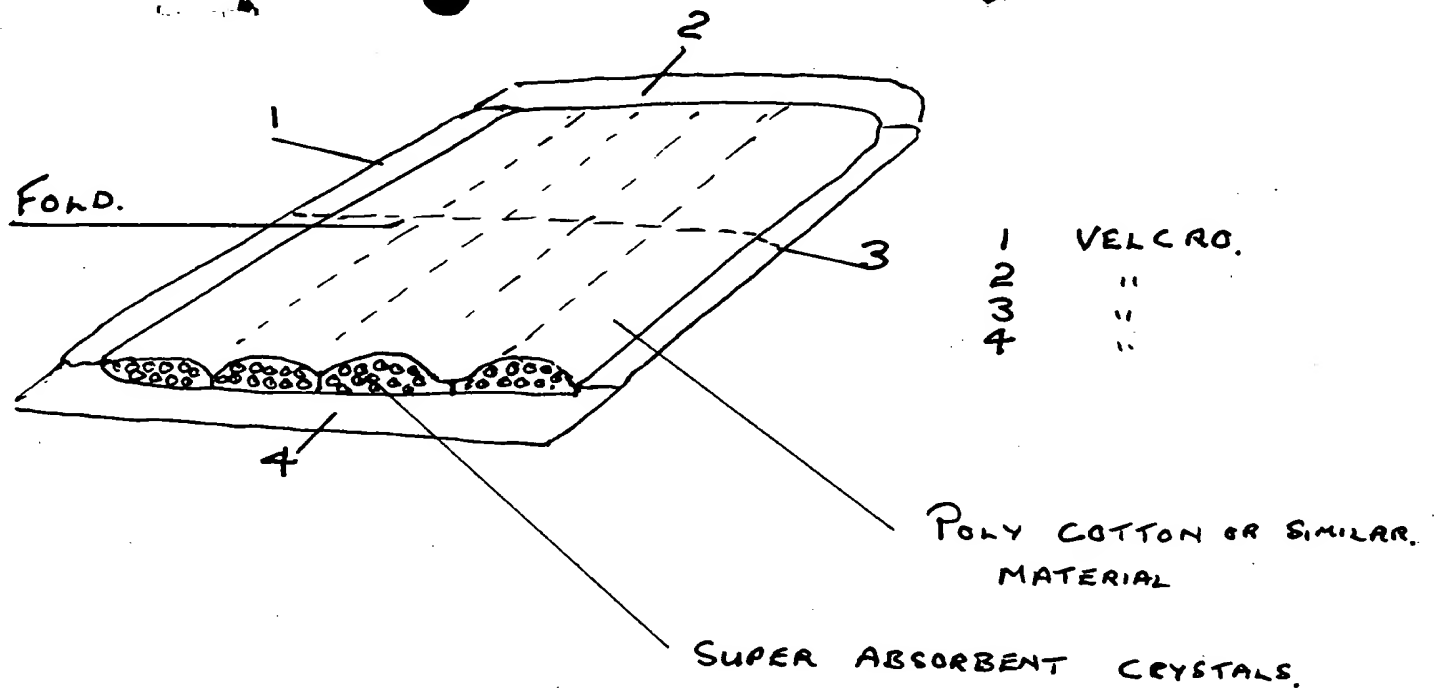
WHEN THE WALLET IS SUBMERSED IN WATER THE  
CRYSTALS ABSORB THE WATER AND SWELL UP TO FORM  
A GEL. THIS GEL RETAINS ITS WATER CONTENT AND  
TEMPERATURE FOR UP TO 4 DAYS.

IN ITS CLOSED CONDITION THE WALLET IS CAPABLE  
OF KEEPING CONTAINED SUBSTANCES I.E. THOSE PLACED  
IN THE WALLET, AT TEMPERATURES RELATIVE TO THAT  
OF THE GEL FOR LONG PERIODS.

IN ITS FLAT STATE THE WALLET CAN BE USED  
IN EMERGENCIES AS A COLD COMPRESS AS AN AID  
FOR BURNS OR FOR BRUISES AND SPRAINS FOR SIMILARLY  
LONG PERIODS.

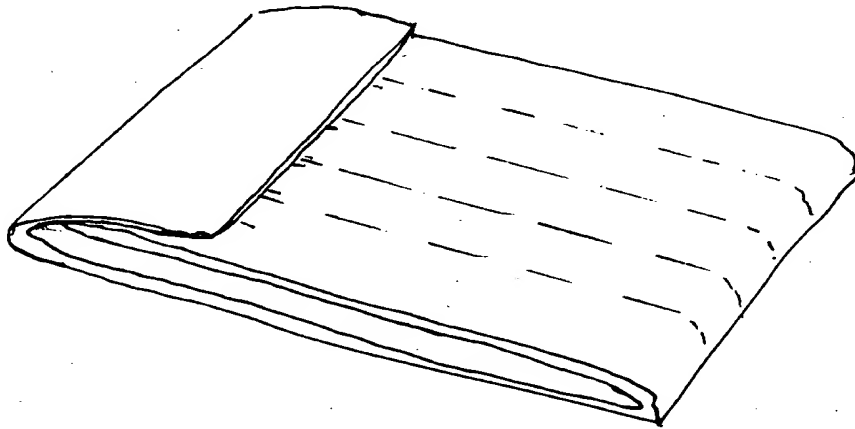
1. THIS WALLET OFFERS A CHEAP EFFECTIVE METHOD OF TRANSPORTING SUBSTANCES WHICH REQUIRE BEING KEPT COLD OR IN SOME CASES FROZEN
2. ONCE THE CRYSTALS IN THE WALLET ARE ACTIVATED BY BEING IMMERSED IN <sup>COLD</sup> WATER, THE TEMPERATURE OF THE WALLET CAN BE LOWERED IF REQUIRED, BY BEING PLACED IN A FRIDGE OR FREEZER FOR A REQUIRED PERIOD. THE USER IS THEN ABLE TO SAFEGUARD THE CONTENTS AGAINST HEAT OR MELTING FOR A MINIMUM OF 48 HRS.
3. THE ADVANTAGES OVER ICE PACKS ARE IMMEDIATELY SEEN
4. THE WALLET IS COMPACT AND EASY TO CARRY
5. IT RETAINS ITS TEMPERATURE FOR A CONSIDERABLE PERIOD
6. IT CAN BE REACTIVATED MANY TIMES, AND WOULD RESPOND FOR A MINIMUM OF 12 APPLICATIONS
7. IT WILL BE RELATIVELY CHEAP TO PRODUCE
8. AS AN AID IN A FIRST AID BOX, FOR BURNS, BRUISES, AND SPRAINS THE "OPEN" WALLET PLACED ON THE INJURY COULD PROVE OF INVALUABLE BENEFIT TO THE INJURED PARTY.
9. AS THE CRYSTALS EXPAND TO OVER 400 TIMES THEIR SIZE WHEN IMMERSED IN A LIQUID. IN THE "DRY STATE" THE "WALLET" CAN BE FOLDED OR ROLLED UP IN A COMPACT FORM FOR STORAGE.

OPEN FLAT.



"WALLET"  
FOLDED.

SIZE OF WALLET WILL BE RELATIVE TO SUBSTANCES  
BEING CARRIED.



CRYSTALS EXPAND UP TO 400 TIMES IN SIZE  
WHEN IMMERSSED IN WATER.



The Patent Office  
Concept House  
Cardiff Road  
Newport  
South Wales  
NP10 8QQ

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

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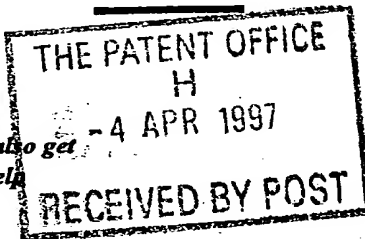
Signed

*Andrew Gersey*

Dated 23 August 1999

**Request for grant of a patent**

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The Patent Office

Cardiff Road  
Newport  
Gwent NP9 1RH

1. Your reference P66565

2. Patent application number **9706888.6**  
(The Patent Office will fill in this part)

04APR97 E265121-1 000446  
P01/7700 25.00

3. Full name, address and postcode of the or of each applicant. (underline all surnames)

|  |  |   |
|--|--|---|
| Patents ADP number (if you know it)<br><br>If the applicant is a corporate body, give the country/state of its incorporation | Henry Garnet WOLSEY,<br>Whiteleys,<br>Little Treffgarn,<br>Haverfordwest,<br>Pembrokeshire,<br>SA62 5DY. | Althea WOLSEY,<br>Whitelys,<br>Little Treffgarn,<br>Haverfordwest,<br>Pembrokeshire,<br>SA62 5DY. |
|--|--|---|

7087299001

7087307001

4. Title of the invention  
Cooling Pouch

5. Name of your agent (if you have one)

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

Urquhart-Dykes & Lord,  
 Alexandra House,  
 1 Alexandra Road,  
 SWANSEA,  
 SA1 5ED.

Patents ADP number (if you know it) ~~1644027~~ 1644008

| 6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number | Country | Priority application number (if you know it) | Date of filing (day / month / year) |
|--|---------|--|-------------------------------------|
|  | UK      | 9622047.0                                    | 23 October 1996                     |

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

| Number of earlier application | Date of filing (day / month / year) |
|-------------------------------|-------------------------------------|
|                               |                                     |

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if:

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- b) there is an inventor who is not named as an applicant, or
- c) any named applicant is a corporate body

See note (d)) No

**Patents Form 1/77**

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Continuation sheets of this form

Description

5

Claim(s)

Abstract

Drawing(s)

1

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Any other documents (please specify)

11.

I/We request the grant of a patent on the basis of this application.

Signature

Date

12. Name and daytime telephone number of person to contact in the United Kingdom

Mr. H.W. Austin  
01792 474327

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### Cooling Pouch

The present invention relates to cooling pouches, such pouches being typically for storing medication, such as vials of insulin or the like.

Persons afflicted by diabetes mellitus ("diabetes") are unable to secrete sufficient insulin, which results in excess of sugar in the bloodstream. Sufferers from diabetes may require treatment consisting of hypodermic injections of insulin, as the latter assists the body to metabolise the excess sugar. It is often necessary to store insulin ready for use by injection or the like.

In order to maintain an insulin preparation in a fresh condition, it should be kept at a temperature lower than normal ambient temperature. This requires that the insulin should be stored in a refrigerator or other cooling device, such as, for example, an ice box. However, people suffering from diabetes who require several injections of insulin per day are inconvenienced if they are away from home for a long period of time.

WO83/04089 discloses a portable carrying pouch which contains a removable refrigerating agent, for use when storing insulin. Other portable carrying devices are known for purposes, other than storage of medicines, for example, for carrying food. By way of example, US patent 4211091 discloses a pliable, insulated bag for use as a lunch bag for temporary storage of foodstuffs; US patent 4530220 discloses a deformable bag for use as a cooling medium, which bag comprises an envelope filled with a gel substance, the whole bag being intended to be cooled to a temperature less than  $-10^{\circ}\text{C}$ .

It is an aim of the present invention to provide a portable, flexible cooling pouch which does not require refrigeration and does not contain removable refrigeration parts.

According to the present invention, there is provided a portable, flexible, pouch for cooling and storing vials or the like, the pouch comprising opposed web members each of a water-permeable material, the opposed web members being connected together at edges thereof, at least one of the web members comprising a plurality of compartments which contain water-absorbent granular material.

Typically, each of the web members comprises a plurality of such compartments, each of which contains such a water-absorbent granular material.

Preferably, each of the opposed web members is of quadrilateral shape, such as rectangular. The opposed web members are preferably integrally formed from a single web, arranged to be folded along a transverse hinge line or foldline.

Preferably, the opposed web members are connected together by fastening means at respective edges of the web members; such edges are preferably along longitudinally extending edges of the web members.

In a preferred embodiment of the invention, the water-permeable material comprises a durable, flexible textile material, such as a woven fabric. A particularly preferred textile material is a polyester/cotton fabric blend, although other textile materials such as a nylon or an acrylic may also be used.

Typically, the water-absorbent material is one which is capable of regeneration after it has been dried out, preferably over repeated water absorption and desorption cycles. The water-absorbent material is preferably a polymeric material, such as an acrylic polymer. Such a polymer may be a cross-linked acrylate or methacrylate polymer, such as sodium salt thereof. It is particularly preferred that the polymer is one which has a transition between respective hydrated forms at or close to ambient temperature, such that the latent heat absorbed or evolved on passage through the transition temperature helps to maintain the temperature substantially constant for a prolonged period.

In a preferred embodiment of the invention, the fastening means comprise at least one first element comprising a multiplicity of hooks, and at least one complementary second element comprising a multiplicity of loops engageable with the hooks on the first element. The complementary elements are typically in the form of strip or tape.

Preferably, the web members are fastened together by the fastening means in such a way that one of the opposed web members extends beyond the free edge of the other of the opposed web members, so as to form a flap foldable over a marginal portion of the other web member.

Such a flap preferably has fastening means on a first face of the one web member and extending transverse thereto, for engagement with complementary fastening means on the marginal portion on the other web member.

The compartments containing the water-absorbent material may be formed by sewing a double skinned web member along the length thereof; a plurality of such sewing lines is preferably employed so as to divide the web members lengthwise into a plurality of longitudinally extending tubular compartments for the water-absorbent material. At least one further line of sewing is preferably provided transverse to the or each web member so as to control the distribution of the water-absorbent material along the length of the respective compartment or compartments. It is preferred that the transverse sewing line is provided along the abovementioned transverse foldline.

The present invention further comprises a method of storing a medicine (preferably in a vial or the like) which comprises treating the web members of a pouch according to the invention with cold water, either before or after shaping the web members to form the pouch, so as to cause swelling of the water-absorbent material within the compartments thereof, and disposing the medicine within the pouch while the compartments contain the swollen water-absorbent material.

The invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 is a plan view of a pouch according to the invention; and

Figure 2 is a cross-section along the line AA shown in Figure 1.

Referring to the drawings, a fabric web 1 comprises a double skinned front fabric panel 2 and a corresponding double-skinned rear fabric panel 3. The front panel 2 has a series of parallel, longitudinally extending stitching lines 11, which (with the corresponding edges of the respective panel) form respective compartments 4a, 4b and 4c, each of which contains water-absorbent grains of sodium polyacrylate 5 (see Figure 2).

The rear panel 3 also has a series of parallel, longitudinally extending stitching lines 12, which (with the corresponding edges of the respective panel) form respective 6a, 6b and 6c. A strip 7a of one part of a hook-and-loop type fastener of the type commercially available under the trade mark Velcro is sewn to a side edge of the front panel 2; a complementary part of the fastener 9a is sewn to a side edge of the rear panel 3. A further strip 7b of one part of such a hook-and-loop type fastener is sewn to the opposed side edge of the front panel 2; a complementary part of the fastener 9b is sewn to the corresponding side edge of rear panel 3.

A further strip 10 of one part of such a hook-and-loop type fastener is sewn to the free end of the front panel 2; a complementary part of the fastener (not shown) is sewn to a corresponding end of rear panel 3 (on the obverse face thereof). The free end of the front panel 2 to which strip 10 is sewn thereby forms a flap, which can overlap the corresponding free end of rear panel 3.

A foldline 8 is provided between the front panel 2 and the rear panel 3. This foldline is preferably defined by a row of stitching which separates compartment 4a from 6a, compartment 4b from 6b, compartment 4c from 6c, and compartment 4d from 6d.

The front and rear panels 2,3 are folded together about the foldline and secured together by the various fastening means to form a pouch.

The whole web may be immersed in cold water, typically for about 90 seconds; the grains 5 then form a gel-like substance which can retain the temperature of the water for approximately 3 to 4 days. If a temperature lower than that of the cold water is required, it is possible to place the whole web in a refrigerator, or the like, in order to lower the temperature.

Once the web is at the desired temperature, it is folded along the foldline 8, in order that the front panel 2 can be fastened to the rear panel 3 by means of the fastener 7a,7b, 9a,9b so as to form a pouch. Insulin or other medication that needs to be stored at a lower temperature than room temperature, can then be stored in the pouch, typically in vials or the like, for a period of typically 3 to 4 days.

#### Example 1

Measurements were made of the temperature of the inside of an empty pouch made according to the present invention. After immersion of the pouch in cold water, temperature measurements were made of the pouch which was suspended in an incubator where air temperature was maintained close to 37.8°C (100°F) with low relative humidity (15%). Measurements were made at 10 minute intervals for periods of between 24 and 48 hours. The pouch maintained internal temperatures below 30°C for periods exceeding 14 hours.

